



DECUS

PROGRAM LIBRARY

DECUS NO.	8-372
TITLE	ML EDITOR (MACHINE LANGUAGE EDITOR)
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COMPANY	Rikei Corporation Tokyo, Japan
DATE	August 10, 1970
SOURCE LANGUAGE	PAL D, MACRO-8

REC'D

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MLEEDITOR

DECUS Program Library Write-up

DECUS No. 8-372

"ML Editor" is the extended version of "GOOF", DECUS No. 8-97. It is useful for debugging, monitoring and editing the program in the core memory. "ML Editor" added the following functions to "GOOF":

- | | | | | |
|----|--|------|-----|---|
| 1. | *1000 | 1234 | ... | Swap data 1234 in LOC. 1000 |
| 2. | *I*1000 | 1234 | ... | Insert data 1234 to LOC. 1000 |
| | 1001 | | | Next address print after above op. |
| 3. | *Z*1000 | 2000 | ... | Zero clears from LOC. 1000 to 2000 |
| 4. | *P*1000 | 2000 | ... | Print out location from 1000 to 2000 |
| 5. | *B*0002 | | ... | Binary punch out to HSP. 0002 indicates the blocks of punch |
| | 1000 | 2000 | ... | Punch out from LOC. XXXX to YYYY |
| 6. | Typing "RUB-OUT" reinitializes the program | | | |

Storage: 7040-7177
7040-7177 ... Binary punch-out routine
7200-7577 ... Main program

Start Address: 7200

If you don't need the "Binary Punch-out", you can use the location 0000-7177.

.PALS

?

.PALD

*OUT-

*

*IN-S:M123

*

*OPT-T

A	7474
ACC	7244
ADDR	7246
AGAIN	7271
B	7544
BADD	7521
BINP	7126
BPUN	7040
CKSM	7153
CODE	7254
CR	7263
CRLF	7304
CTR1	7160
C200	7161
FA	7156
FLAG	7241
FRST	7520
IA	7155
INDX	7250
LADDR	7517
LF	7262
LOC	7417
LOCP	7446
M10	7256
M212	7157
M260	7253
M311	7257
M320	7445
M4	7255
M66	7260
NB	7154
NUMB	7220
NXEL	7055
NXT	7216
OCTPCH	7264
PLOT	7115
PUN	7146
PUNL	7073
PI	7556
P240	7247
P252	7242

P277	7261
P311	7243
P7	7252
RD	7400
RETRN	7205
ROT	7312
ROTS	7315
ROTX	7336
SAFE	7251
SCND	7245
SL6	7164
SL7	7163
STRT	7200
TEMI	7162
TYPE	7340
WRONG	7441
XI	7443
ZERCL	7522

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/*****
/**** MACHINE LANGUAGE EDITOR****
/*****
/
/      EXTENDED GOOF PROGRAM IN DECUS
/
/      OPERATION PROCEDURE;
/      *1000 1234 .... SWAP LOC. 1000 TO 1234(DATA)
/      *I* 1000 1234 .. INSERT LOC. 1000 TO DATA 1234
/      *P* 1000 2000 .... PRINT OUT LOC.      FR. 0
/      *B* 0001 .... BINARY PUNCH-OUT TO HSR
/              0001 INDICATE " HOW MANY BLOCKS?
/      (EASY TO CHANGE ASR33 REF. BINARY PUNCH RT.)
/      1000 2000 .... BINARY PUNCH-OUT LOC.      FR. 0
/
/      *Z* 1000 2000 .... ZERO CLEAR LOC FR. TO
/
/      .....
/      IF YOU DON'T NEED BINARY PUNCH-OUT
/      CORE : LOC. 7200-7577 (AVAILABLE)
/      (BINARY PUNCH ROUTINE ... LOC. 7040-7177)
/

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/***** BINARY PUNCH *****/

*7040			
7040	7300	BPUN,	CLA CLL
7041	6026		PLS
7042	1777		TAD SAFE
7043	4776		JMS TYPE
7044	1775		TAD P252
7045	4776		JMS TYPE
7046	3353		DCA CKSM
7047	4315		JMS PLOT
7050	7200		CLA
7051	4774		JMS ROT
7052	1773		TAD ACC
7053	7041		CIA
7054	3354		DCA NR
7055	4772	NXBL,	JMS CRLF
7056	4774		JMS ROT
7057	1773		TAD ACC
7060	3355		DCA IA
7061	1771		TAD P240
7062	4776		JMS TYPE
7063	1771		TAD P240
7064	4776		JMS TYPE
7065	4774		JMS ROT
7066	1773		TAD ACC
7067	7001		IAC
7070	3356		DCA FA
7071	1355		TAD IA
7072	7120		STL
7073	4326	PUNL,	JMS BINP
7074	1355		TAD IA
7075	7041		CIA
7076	1356		TAD FA
7077	7650		SNA CLA
7100	5305		JMP .+5
7101	1755		TAD I IA
7102	7100		CLL
7103	2355		ISZ IA
7104	5273		JMP PUNL
7105	2354		ISZ NB
7106	5255		JMP NXBL
7107	1353		TAD CKSM
7110	7100		CLL
7111	4326		JMS BINP
7112	4315		JMS PLOT
7113	5770		JMP STRT
7114	5240		JMP BPUN

7115	0000	PLOT,	0
7116	7300		CLL CLA
7117	1357		TAD M212
7120	3360		DCA CTR1
7121	1361		TAD C200
7122	4346		JMS PUN
7123	2360		ISZ CTR1
7124	5322		JMP .-2
7125	5715		JMP I PLOT
7126	0000	BINP,	0
7127	3362		DCA TEM1
7130	1362		TAD TEM1
7131	7012		RTR
7132	7012		RTR
7133	7012		RTR
7134	0363		AND SL7
7135	4346		JMS PUN
7136	1353		TAD CKSM
7137	3353		DCA CKSM
7140	1362		TAD TEM1
7141	0364		AND SL6
7142	4346		JMS PUN
7143	1353		TAD CKSM
7144	3353		DCA CKSM
7145	5726		JMP I BINP
7146	0000	PUN,	0
7147	6021		PSF
7150	5347		JMP .-1
7151	6026		PSL
7152	5746		JMP I PUN
7153	0000	CKSM,	0
7154	0000	NB,	0
7155	0000	IA,	0
7156	0000	FA,	0
7157	7566	M212,	-212
7160	0000	CTR1,	0
7161	0200	C200,	200
7162	0000	TEM1,	0
7163	0177	SL7,	177
7164	0077	SL6,	77

/***** BINARY PUNCH END *****/

/*** GOOF ***

7170	7200		
7171	7247		
7172	7304		
7173	7244		
7174	7312		
7175	7242		
7176	7340		
7177	7251		
		*7200	
7200	4304	STRT,	JMS CRLF
7201	4304		JMS CRLF
7202	3241		DCA FLAG
7203	1777		TAD FRST
7204	3776		DCA LOC
7205	1242	RETRN,	TAD P252
7206	4340		JMS TYPE
7207	4312		JMS ROT
7210	7450		SNA
7211	5216		JMP NXT
7212	3241		DCA FLAG
7213	1243		TAD P311
7214	4340		JMS TYPE
7215	5205		JMP RETRN
7216	1244	NXT,	TAD ACC
7217	3246		DCA ADDR
7220	1247	NUMB,	TAD P240
7221	4340		JMS TYPE
7222	1247		TAD P240
7223	4340		JMS TYPE
7224	4312		JMS ROT
7225	1244		TAD ACC
7226	3646		DCA I ADDR
7227	1241		TAD FLAG
7230	7650		SNA CLA
7231	5200		JMP STRT
7232	2246		ISZ ADDR
7233	4304		JMS CRLF
7234	1242		TAD P252
7235	4340		JMS TYPE
7236	1246		TAD ADDR
7237	4264		JMS OCTPCH
7240	5220		JMP NUMB
7241	0000	FLAG,	0
7242	0252	P252,	252
7243	0311	P311,	311
7244	0000	ACC,	0
7245	7000	SCND,	NOP
7246	0000	ADDR,	0

7247	Ø24Ø	P24Ø,	24Ø
725Ø	ØØØØ	INDX,	Ø
7251	ØØØØ	SAFE,	Ø
7252	ØØØ7	P7,	7
7253	752Ø	M26Ø,	Ø-26Ø
7254	Ø26Ø	CODE,	26Ø
7255	7774	M4,	Ø-4
7256	777Ø	M1Ø,	Ø-1Ø
7257	7467	M311,	Ø-311
726Ø	7712	M66,	Ø-66
7261	Ø277	P277,	277
7262	Ø212	LF,	212
7263	Ø215	CR,	215
7264	ØØØØ	OCTPCH,	Ø
7265	7ØØ4		RAL
7266	3251		DCA SAFE
7267	1255		TAD M4
727Ø	325Ø		DCA INDX
7271	1251	AGAIN,	TAD SAFE
7272	7ØØ6		RTL
7273	7ØØ4		RAL
7274	3251		DCA SAFE
7275	1251		TAD SAFE
7276	Ø252		AND P7
7277	1254		TAD CODE
73ØØ	434Ø		JMS TYPE
73Ø1	225Ø		ISZ INDX
73Ø2	5271		JMP AGAIN
73Ø3	5664		JMP I OCTPCH
73Ø4	ØØØØ	CRLF,	Ø
73Ø5	1263		TAD CR
73Ø6	434Ø		JMS TYPE
73Ø7	1262		TAD LF
731Ø	434Ø		JMS TYPE
7311	57Ø4		JMP I CRLF
7312	ØØØØ	ROT,	Ø
7313	1255		TAD M4
7314	325Ø		DCA INDX
7315	3244	ROTS,	DCA ACC
7316	4775		JMS RD
7317	744Ø		SZA
732Ø	5712		JMP I ROT
7321	1251		TAD SAFE
7322	434Ø		JMS TYPE
7323	1245		TAD SCND
7324	3776		DCA LOC
7325	1251		TAD SAFE
7326	Ø252		AND P7
7327	1244		TAD ACC
733Ø	225Ø		ISZ INDX
7331	741Ø		SKP
7332	5336		JMP ROTX

7333	7106		CLL RTL
7334	7104		CLL RAL
7335	5315		JMP ROTS
7336	3244	ROTX,	DCA ACC
7337	5712		JMP I ROT
7340	0000	TYPE,	Ø
7341	6046		TLS
7342	6041		TSF
7343	5342		JMP .-1
7344	7200		CLA
7345	5740		JMP I TYPE
7375	7400		
7376	7417		
7377	7520		
		*7400	
7400	0000	RD,	Ø
7401	6031		KSF
7402	5201		JMP .-1
7403	6036		KRB
7404	3777		DCA SAFE
7405	1777		TAD SAFE
7406	1776		TAD M260
7407	7510		SPA
7410	5241		JMP WRONG
7411	1775		TAD M10
7412	7710		SPA CLA
7413	5600		JMP I RD
7414	1777		TAD SAFE
7415	1774		TAD M311
7416	7450		SNA
7417	5243	LOC,	JMP XI
7420	1773		TAD M66
7421	7650		SNA CLA
7422	5772		JMP STRT
7423	1777		TAD SAFE
7424	1245		TAD M320
7425	7450		SNA
7426	5246		JMP LOCP
7427	7300		CLA CLL
7430	1777		TAD SAFE
7431	1371		TAD (-332
7432	7450		SNA
7433	5322		JMP ZERCL
7434	7300		CLA CLL
7435	1777		TAD SAFE
7436	1370		TAD (-302
7437	7450		SNA
7440	5767		JMP BPUN
7441	7200	WRONG,	CLA
7442	5201		JMP RD+1

/BINARY PUNCH-OUT

7443	7001	XI,	IAC
7444	5600		JMP I RD
7445	7460	M320,	0-320
7446	7300	LOCP,	CLA CLL
7447	1777		TAD SAFE
7450	4766		JMS TYPE
7451	1765		TAD P252
7452	4766		JMS TYPE
7453	1764		TAD P240
7454	4766		JMS TYPE
7455	1764		TAD P240
7456	4766		JMS TYPE
7457	4763		JMS ROT
7460	1762		TAD ACC
7461	3321		DCA BADD
7462	1764		TAD P240
7463	4766		JMS TYPE
7464	1764		TAD P240
7465	4766		JMS TYPE
7466	4763		JMS ROT
7467	1762		TAD ACC
7470	1361		TAD (I
7471	7041		CIA
7472	3317		DCA LADDR
7473	4760		JMS CRLF
7474	1321	A,	TAD BADD
7475	4757		JMS OCTPCH
7476	1764		TAD P240
7477	4766		JMS TYPE
7500	1764		TAD P240
7501	4766		JMS TYPE
7502	1721		TAD I BADD
7503	4757		JMS OCTPCH
7504	4760		JMS CRLF
7505	7200		CLA
7506	1321		TAD BADD
7507	7001		IAC
7510	3321		DCA BADD
7511	1321		TAD BADD
7512	1317		TAD LADDR
7513	7650		SNA CLA
7514	7410		SKP
7515	5274		JMP A
7516	5772		JMP STRT
7517	0000	LADDR,	0
7520	5243	FRST,	JMP XI
7521	0000	BADD,	0

7522	7200	ZERCL,	CLA
7523	1777		TAD SAFE
7524	4766		JMS TYPE
7525	1765		TAD P252
7526	4766		JMS TYPE
7527	4763		JMS ROT
7530	1762		TAD ACC
7531	3321		DCA BADD
7532	1764		TAD P240
7533	4766		JMS TYPE
7534	1764		TAD P240
7535	4766		JMS TYPE
7536	4763		JMS ROT
7537	1762		TAD ACC
7540	1356		TAD PI
7541	7041		CIA
7542	3317		DCA LADDR
7543	4760		JMS CRLF
7544	3721	B,	DCA I BADD
7545	1321		TAD BADD
7546	7001		IAC
7547	3321		DCA BADD
7550	1321		TAD BADD
7551	1317		TAD LADDR
7552	7650		SNA CLA
7553	7410		SKP
7554	5344		JMP B
7555	5772		JMP STRT
7556	0001	PI,	I
7557	7264		
7560	7304		
7561	0001		
7562	7244		
7563	7312		
7564	7247		
7565	7242		
7566	7340		
7567	7040		
7570	7476		
7571	7446		
7572	7200		
7573	7260		
7574	7257		
7575	7256		
7576	7253		
7577	7251		

